

*Request for Information and Expressions of Interest for the Next Generation Nuclear
Plant
DOE Public Meeting
June 25, 2004*

Note: Public comments are essential to assist the Department in developing a strategy for development of the NGNP. These questions and answers are developed in advance of the Departments formal determination of Mission Need and the selection of an approved acquisition strategy.

Question 1: With whom would the cooperative agreement be signed?

Answer: The cooperative agreement would be awarded to the Project Integrator. The Integrator would then enter into one or more agreements with the consortium that define the roles and responsibilities of the members of the consortium.

Question 2: What do you envision as cost share before business plan approval?

Answer: DOE expects that its cost share will be 50% over the life of the program, but may be higher during early stages of the project. It is possible that the DOE cost share prior to business plan approval may be 100%.

Question 3: Conceptually, is it true that the design competition precedes the business plan?

Answer: Yes. That is our current thinking. We are open to suggestions.

Question 4: Does the Integrator self perform?

Answer: Yes; that said, once the consortium is formed, the Integrator's role will be determined through agreements with other consortium members.

Question 5: When is the consortium selected?

Answer: We expect that the Integrator will select consortium members as it proceeds to determine the technology and design of the NGNP. We will require that a proposed consortium be presented with the business plan.

Question 6: Can the Integrator be part of the consortium?

Answer: Yes, the Integrator forms the consortium and is expected to be a member. DOE's cooperative agreement will be formally with the Integrator even after the consortium is established.

Question 7: Does DOE fund the Integrator via the INL?

Answer: No, funding will be accomplished through the terms of the cooperative agreement. However, a significant portion of DOE's share of project costs is expected to be INL R&D.

Question 8: What is the role of the Idaho National Laboratory?

Answer: INL will lead NGNP R&D and serve as the technology agent for the project. We expect the Integrator and the INL to work together very closely to assure the success of the project.

Question 9: Will the consortium be required to comply with 413.3-1 Project Management?

Answer: In all events, the intent of 413.3 will be met. It is possible, given the commercial nature of the project, that DOE will decide that commercial project management standards are the best way to ensure the project's success.

Question 10: Are companies allowed to participate in both the INL site contracts and the NGNP project?

Answer: Neither the INL solicitation nor the NGNP solicitation prohibits affiliated companies from competing for both awards. However, if a conflict of interest is identified, the conflict will have to be mitigated or avoided before work can proceed.

Question 11: Is there a conflict of interest in the PI being part of the consortium?

Answer: No. The Integrator is expected to assemble the consortium and play a significant role as a member of it.

Question 12: Will DOE exercise any input on the technology selection or does the Integrator have 100% control.

Answer: As the steward of the taxpayers' interests, DOE will have a review and approval role in the technology selection. While we fully expect to respect the selection made by the Integrator, DOE reserves the right to reject a technology that it believes would not serve the public interest.

Question 13: Will there be specifications related to the reactor design and if so, who will set the specs?

Answer: DOE has established high level economic goals for the NGNP, which are open for comment as are the other aspects of the strategy. The NGNP also must be able to produce both hydrogen and electricity. Specifications beyond what DOE has provided will be made by the Integrator as long as they meet the high level DOE requirements.

Question 14: What project controls do you see for those who provide cost sharing? And how do you see those controls being implemented *i.e.* via the PI or direct from DOE?

Answer: We expect the PI will establish appropriate program controls consistent with their experience, regulatory requirements, and industry proven practices. Reporting requirements and deliverables to the Department of Energy will be specified in the cooperative agreement.

- Question 15: During the design/technology competition, is it expected to have INL perform R&D activities in support of determining performance and capabilities objectively?
- Answer: INL is the DOE's lead laboratory for NGNP R&D, and will provide the core technical support for all key project developments.
- Question 16: You discussed the relationship between the Project Integrator and INL, but did not mention how the PI will work with the new M&O organization being selected to manage INL. How do you see the role of the latter (M&O) in the NGNP?
- Answer: The M&O will manage INL's technology support of the project.
- Question 17: The cost-share is being described as a percentage. Does that mean that DOE is only planning on decreasing funding as a percentage of total funding or will they decrease the actual dollar amount contributed to the cost-share?
- Answer: We are aiming at a DOE cost-share of 50% over the entire project. This means that the Department expects to fund half the cost of the project, with the other half coming from consortium cost share. In any individual year, the actual cost share may vary. It's possible that the government may provide 100% of the funds in the first year or two of the project.
- Question 18: In view of the DOE year to year funding process and its inherent uncertainty, what assurances do the cost sharing participants have that DOE will fully fund the project to a logical completion point?
- Answer: All DOE projects are funded subject to Congressional appropriations. That said, we are confident that Congress understands that approved projects must be adequately funded or overall costs rise significantly, schedules are crippled, and cost share is endangered.
- Question 19: If the project is not funded to a logical completion point, how does DOE intend to deal with Intellectual Property Rights?
- Answer: Intellectual Property rights, such as those related to a premature termination, will be negotiated as part of the cooperative agreement.
- Question 20: Will the PI be expected to cost-share in this project? If so, at what level?
- Answer: DOE expects that through the cooperative agreement, it will make a contribution of 50% of the cost over the life of the project. It does not matter from which entity(s) the 50% cost share originates. However, the Integrator, as the party to the cooperative agreement, will be contractually responsible for assuring that the agreement terms, with respect to the contribution, are met.

Question 21: How will the needs of investors and owner/operators be incorporated into the NGNP program?

Answer: The consortium that will lead the development of the NGNP will also be its owner, and more importantly, will have the commercial rights for further distribution of the technology.

Question 22: How might a change in presidential administrations impact DOE funding for this project?

Answer: While it is clearly true that the current administration has been very forward looking and supportive of nuclear energy, our programs have grown during the past eight years across two administrations. Furthermore, the Congress has demonstrated its broad support for the availability of a wide range of energy sources, including nuclear.

Question 23: Will there be specifications related to the reactor designs and if so, who will set the specs of the requested reactor designs?

Answer: The PI will set the specifications. We are looking for industry to set specifications to meet program goals.

Question 24: Does the electrical transmission system exist in Idaho to support this project?

Answer: There is a history of producing electricity from experimental facilities in Idaho, but the NGNP's purpose is first and foremost a pilot demonstration facility. Industry will use the technology demonstrated for future electricity generation capability. DOE is, however, interested in getting feedback on the potential commercial applications of the demonstration facility.

Question 25: Please provide expected dates for items on "Next Steps"

Answer: We do not have specific dates at this time; we will provide more information as the program progresses. We must first develop a "mission need" and acquisition strategy under the DOE project management process. The information we obtain from your comments will assist us in this. We hope to complete this first step this summer, allowing a formal program announcement in the fall.

Question 26: Does DOE want EOIs from prospective suppliers/subcontractors to the Project Integrator and consortium?

Answer: DOE wants comments on the outlined strategy from any interested party, but is interested in obtaining expressions of interest from prospective Project Integrators.

Question 27: What happens to all of the Independent Technology Review Group work with respect to the Design Competition?

Answer: DOE will provide the completed ITRG Report to the NGNP Project Integrator for consideration in its efforts.

Question 28: How can DOE approve construction if an NRC license is required? What is DOE doing to help prepare NRC (*i.e.*, funding--NRC has shut down their gas reactor activities)?

Answer: DOE has been working with NRC to develop an approach to assuring that the NGNP can be licensed when the time comes. This effort is ongoing.

Question 29: What is the schedule for the CD-1 package for the NGNP?

Answer: CD-1 represents an internal decision to "Approve Alternative Selection and Cost Range," and coincides with the Department's approval of the NGNP Business Plan. Generally, a completed conceptual design is required for CD-1; however, the state of design for the NGNP may not be so advanced at the time the Business Plan is submitted. That said, we expect to have sufficient information to make CD-1 at the time the Business Plan is submitted, approximately 18-24 months after the cooperative agreement is in place.

Question 30: Why will the Project Integrator have rights to the technology developed under this NGNP? How will the Project Integrator be involved in longer term commercial sales of the developed NGNP product?

Answer: We expect that the Integrator and the other members of the consortium will have all rights to the technology and will agree among themselves to distribution of such rights.

Question 31: Could a team act as the project Integrator?

Answer: We expect a single company to fulfill this role.

Question 32: Should DOE be thinking more about distributed energy generation technologies, and moving away from large, centralized production? Please address this in the context of terrorist vulnerability and creating a space for smaller businesses to be involved (creating more job opportunities and competition).

Answer: The modular size that we are presently considering could be deployed in units of 1 or 2 or even in remote locations when that makes economic sense. The candidate NGNP reactor technologies have superior safety characteristics and will be very safe under all conditions, even physical attacks.

Question 33: Why is DOE so focused on using nuclear power to generate hydrogen, rather than putting its efforts toward research on renewable energy sources and the potential for wind and solar to be baseload generation through hydrogen production and storage?

Answer: The nuclear hydrogen effort is but a small part of the Department's overall hydrogen research initiative that is being led by the Office of Energy Efficiency and Renewables. The Department has aggressive efforts exploring the production of hydrogen by renewables, fossil fuels, nuclear, and other means.

Question 34: If DOE takes ownership of the NGNP from the consortium, how will the decommissioning be paid for?

Answer: This is open for discussion. If the DOE assumes ownership of the NGNP after viability testing is complete, it is likely that DOE would pay future decommissioning costs. It may be that D&D share will depend on the life of the plant and who used it for how long. This may be addressed in the cooperative agreement.

Question 35: Will the project Integrator have responsibility for developing the hydrogen production capability?

Answer: INL will lead the development of the hydrogen production system; we believe the Integrator will be able to coordinate with the lab to assure appropriate integration of the activities. DOE is open to considering the option of having the NGNP Integrator also have responsibility for the hydrogen plant, but this is not our thinking at this time.

Question 36: How will the government-led development of the hydrogen plant be integrated with the commercially led NGNP?

Answer: Since the INL will lead the development of the hydrogen production system, we believe the Integrator will be able to coordinate with the lab to assure appropriate integration of the activities.

Question 37: How will passage of Advanced Hydrogen Co-generation legislation (as in current energy bill) impact this program? Is DOE relying on authorization of the \$1.1 billion appropriations, or is funding an issue that has already been resolved or is it an open Question?

Answer: We are currently proceeding under the basic structure of the draft legislation. We can adjust if additional legislation is passed. Even if legislation passes, we would need to obtain adequate appropriations for the project. Issues associated with funding the project are under consideration now.

Question 38: What is the schedule for finalizing the NGNP program strategy?

Answer: We expect to finalize our strategy this summer and hope to issue a program notice in the fall. The program notice would document our final strategy.

Question 39: How will the Project Integrator be selected? What criteria will be used?

Answer: The criteria will be provided in the program notice. We expect the criteria will require that the Integrator be a U.S.-owned company that has extensive experience with large and complex projects and that it be able to make a decision on technology selection without conflict of interest. The selection criteria (provided in notional form in the EOI) are open for comment.

Question 40: Why is a U.S.-owned private company a requirement for the PI? What is the definition of a U.S.-owned private company?

Answer: The U.S. government is prepared to invest a great deal of U.S. taxpayer money in the future of nuclear energy. It is reasonable to expect that the Government would require that a U.S. company lead the development of the NGNP. A term "U.S.-owned company" is defined in 10 C.F.R. 600.501.

Question 41: What is the role of the general public in the development of DOE's NGNP strategy and long-term nuclear hydrogen production?

Answer: Looking to the future, a public outreach program will be developed to promote exchanges with the public on an ongoing basis. The Nuclear Hydrogen Initiative is part of the overall DOE Hydrogen Program managed by the Office of Energy Efficiency and Renewable Energy, which has held public meetings as part of the extensive public involvement in developing our overall hydrogen approach. We would also, of course, engage in a full NEPA process as the program proceeds.

Question 42: Can DOE provide an example that was successful, where a Project Integrator was responsible for commercializing the technology being developed?

Answer: There are many examples of financial assistance awards that resulted in commercial technology. Two examples of cooperative agreements with a consortium are the Advanced Reactor Corporation for First of a Kind Engineering and the US Advanced Battery Consortium.

Question 43: Will DOE require that issues of nuclear waste disposal be resolved before widespread commercial development of the resulting technologies is permitted? Yucca Mountain will already be filled to capacity with existing reactors.

Answer: Industry is fully aware of the nuclear waste issue and understands how to manage waste issues in its planning. As we proceed with the Yucca Mountain project, industry will gain the confidence required to construct new nuclear plants. Also, the very high-burn-up fuel we are developing for the NGNP generates less spent fuel for disposal in a repository.

Question 44: Since international support is normally handled as a nation-to-nation agreement, how is the Project Integrator expected to facilitate this?

Answer: Three ways are envisioned:

- There may be Government-to-Government agreements that result in R&D that will be shared with the consortium
- Work sponsored by the Generation IV International Forum may be shared with the consortium
- Some governments may sponsor corporations from their countries to participate as members of the consortium.

We will coordinate closely with the Integrator in all events.

Question 45: Please clarify the statement that the Federal cost share will go through INL. Does that mean that INL will be the entity that will fund the PI's and the consortium's activities in the early stages?

Answer: The INL will be the technology lead for the project and all R&D funding from DOE will be provided to the INL. Funding of DOE's cost share of the project will be accomplished directly under the terms of the cooperative agreement. Funding for the Integrator's near-term activities would not pass through INL, but would be provided through the cooperative agreement.

Question 46: Is DOE ownership at the outset possible? I don't believe any private entity will own a prototype test reactor.

Answer: Our current thinking is that the reactor would be owned by consortium. After the consortium has operated the reactor sufficiently to demonstrate safe and economical performance, the Department would be willing to consider accepting ownership, under negotiated conditions. We are open to comments on this point.

Question 47: Are you anticipating a paper submission on the 9th, or is an electronic submission ok?

Answer: Either method is acceptable.

Question 48: What is the relationship between this project and the Advanced Gas Reactor Project (*i.e.*, the fuel development project)?

Answer: They are very closely linked. While the NGNP project continues to be established, ongoing research on the base concept will continue.

Question 49: In the EOI there was little mention of fuel. How does the fuel supplier factor into the NGNP project?

Answer: Our fuel R&D program has some industry participation already, and we believe we can develop the capability to provide fuel for the NGNP pilot plant. Fuel supply is a key consideration and must be addressed in the Business Plan and by the consortium.

Question 50: Would DOE permit INL to host a fuel fabrication facility?

Answer: As permitted by NEPA and other applicable regulation and law, the DOE would consider hosting a fuel fabrication facility for the NGNP at the INL.

Question 51: Will DOE allow cost share from previously developed intellectual property?

Answer: The requirements for cost sharing will be determined by the regulations governing financial assistance found at 10 CFR Part 600.

Question 52: Does the cost objective for the NGNP include operations, maintenance, fuel, and capital recovery? In what year dollars is the cost objective?

Answer: The cost objectives for hydrogen and electricity generation costs do not include capital recovery. The cost objective for construction cost is what is typically referred to as the overnight cost. In both cases, objectives are given in 2004 dollars.

Question 53: Will questions and answers from outside this meeting be posted on the web?

Answer: No.

Question 54: Would DOE consider switching Integrators after the business plan to better avail the government of differing strengths of different companies at different stages of the program?

Answer: DOE will consider this idea in formulating our final strategy. As presently envisioned, the consortium would augment the expertise of the Integrator to fulfill the larger role in design, demonstration, construction and operation of the NGNP.

Question 55: Would you consider a different strategy in which multiple potential Integrators each submit a business plan and DOE selects from among them?

Answer: It is an interesting idea and we will consider it. We encourage you to provide more details on this suggestion.

Question 56: If you are not using the plant to make and sell electricity and hydrogen, then what is it for?

Answer: The primary purpose of the plant is to demonstrate the safe and economic production of hydrogen and electricity using nuclear energy. Sales of the resulting hydrogen and electricity are a by-product of the primary purpose. If its ownership is transferred to INL, it may be used to conduct experiments in advanced fuels and materials, and to provide training in the operation of the NGNP.